

AGRICULTURE

EGG-LAYING ABILITY IS INHERITED.

It is a well established fact that there is a great difference in egg production among various breeds of poultry. The great majority of people who have raised poultry have realized that some breeds will lay better than others. More observant poultry raisers have found that there are differences within strains of the same breed. They have found, for instance, that one strain of Harred Plymouth Rocks will lay better than other strains of the same breed. The same will apply to Leghorns and any other breed of poultry. Hence, we appreciate that the strain is of more importance than breed.

Considerable work from a scientific standpoint has been conducted in regard to breeding for increased egg production. Progress along this line is not as substantial as might be expected. Nevertheless, the data obtained is of great importance in the breeding of poultry. The original policy in breeding for increased egg production was to select the heaviest layers for breeding purposes. This line of work was termed "mass selection," but after eleven years of this method of breeding the egg production had actually decreased below that with which it had started. It was found, therefore, that "mass selection" was not improving egg-laying capacities. The data clearly showed that the daughters had not always inherited the egg-laying ability of their mothers. Following the results of this work poultry breeders began to look for a cause, and the general tendency was to ascribe the failure of the "mass selection" method to lack of constitutional vigor. Notwithstanding the fact that heavy laying may be a more or less common characteristic, it was found that the vitality of 200-egg hens was so materially affected that, in the majority of cases, they were not able to produce daughters possessing normal vitality. This is true, for more advanced work in poultry breeding has established the fact that heavy egg production is not inherited from the dam but is inherited from the sire. A heavy egg layer is one which has a good egg record for the entire year but which does not produce 20 eggs during the winter months, that is, during the winter season, from the 1st of October to the 1st of March. Any hen which does not produce 20 eggs during that time is classified as an average or a poor producer. Practically all breeding work is based on the selection of breeders from the standpoint of their winter production. This factor is of economic importance because we find that winter egg production is the most profitable phase of our poultry industry and it should be the aim of every one who is keeping fowls to secure the largest possible winter production.

In brief, the results of the more advanced work in breeding for increased egg production show the following facts:—

That heavy egg-laying ability may be inherited by daughters from their sire regardless of the egg-laying qualities of the dam. This is shown in the results obtained in breeding the same sire to different dams, the result being that many daughters are good egg layers and many are poor layers as well as do many daughters of the good laying dams. That is, the proportion of daughters which inherit heavy egg-laying ability is dependent upon the sire.

In the second place it was shown that heavy egg-laying ability is not inherited by daughters from their dam. This is shown from the fact that continued selection of heavy laying dams does not affect in any way the heavy egg production of the daughters. More over, the production of heavy laying daughters is the same whether the dam is high or low egg-laying ability, providing both are mated to the same male. This is equivalent to proving the influence of the sire in increased egg production.

Lastly, the daughters of a heavy laying dam may show either high or low egg-laying ability depending upon their sire.

The results of these experiments conducted in breeding poultry have been of immense benefit as well as great interest. Briefly, these results may be explained from the fact that heavy egg production follows a different course of inheritance from average egg production. The inheritance of egg-laying ability depends upon three factors:—A hen must have a normal ovary, else she cannot produce eggs. Having a normal ovary she must first possess the factor of normal egg production, that is, she must be able to lay approximately 150 to 180 eggs in the year, although she may lay comparatively few of them during the winter months. The third factor entering into the inheritance of egg-laying ability is the factor for excess egg production. This factor simply means that the hen must lay 30 or more eggs during the winter season, as intimated previously. Now the factor for normal egg production is inherited in the ordinary Mendelian fashion, that is, a pullet may inherit the normal egg-laying factor from either the dam or the sire or both. If she possesses this factor inherited from either or both parents she will be a normal layer. On the other hand, the factor for excess egg production is inherited in a different way than the factor for normal egg production. The results of breeding experiments in many different lines have shown that sex is an inherent quality, and, moreover, it was found that the factor for excess egg production is sex limited and is born by the male bird only. Therefore, in breeding for heavy egg production in pullets, male birds must be used which possess the excess egg production factor. That is why so much attention is now given to the proper selection of cockerels in breeding work. Breeders now assume that the greatest improvement can come only through the selection of bred-to-lay cockerels. At the same time, however, sufficient attention must be given to the female side of the breeding stock to insure the maintenance of constitutional vigor and vitality.

The interpretation of these results may be slightly beyond the grasp of the average poultryman and farmer, and, doubtless, a few suggestions can be made which will be of considerable value. It should first be stated that great attention should be paid to constitutional vigor and vitality, for in the long run egg production largely depends upon the health of the hen. If one is to obtain the best results no bird should be used as a breeder which has ever been ill. In the second place careful observation of the flock

from day to day should enable one to select the best producers among the females in order that they may be used as breeders to obtain suitable cockerels for breeding purposes. It is not practicable for the average farmer or poultryman to practice "mass selection," but one should be able to make considerable improvement through the study of his fowls. It might also be suggested that too much out-breeding should not be done as the securing of new stock from different parties from year to year is liable to affect the egg-laying quality of the present strain.

THE IMPORTANCE OF THE REMOVAL OF MALE BIRDS AFTER THE BREEDING SEASON

By W. A. Brown and J. H. Hare

Eggs which have been fertilized constitute the greatest proportion of the inferior stock which, when examined, proves unfit for food. It is not necessary that these shall have remained for a time under a broody hen, a temperature of seventy degrees being, in itself, sufficient to cause the germ to commence to grow. If the heat is constant the development of the chick will constitute, but if it ceases or is intermittent, putrefaction at once sets in and the egg becomes bad. On the other hand, infertile eggs which are free from the active germ cell, do not, under ordinary conditions, deteriorate seriously.

Few farmers seem to realize these facts, and consequently very few make any effort to insure fertility. The impression prevails among many that the presence of the male bird in the flock is essential to the production of a maximum number of eggs. This assumption has been proven time and time again, to be absolutely without foundation.

Farmers and others selling eggs for market are recommended to kill off or dispose of the male birds after the breeding season. As a result of their remaining with the flock, a large number of Canadian farmers lose each year at least a million dollars, through the presence of partially incubated eggs in the produce which is marketed. The fact that the best trade in many cities in Canada now offers the premium of one to five cents per dozen, for non-fertile eggs, suggests an additional financial consideration which but few can afford to overlook.

PRESERVING EGGS IN WATERGLASS

Mix one pound of waterglass to one gallon of water. Of course the solution must be perfectly cool before you put the eggs in. Then fill wooden buckets, or a clean vessel of any kind, with the solution. You should only fill them about one-third full, because when you put the eggs in the solution of course rises. You can put the eggs in daily as they are gathered.

Always let the eggs cool for 12 hours before putting them in the waterglass solution. Do not put any very thin shelled eggs, no dirty eggs, or cracked ones. Be careful not to crack any when placing them in the solution.

If you have large quantities of eggs, you can carefully put the eggs in the vessels first, then pour the waterglass solution over them. Eggs over two days old are not nearly as good, and do not compare with eggs put into the solution that are only 12 to 24 hours old. Stale eggs are always a failure.

The best eggs for preserving are from hens that have no male bird running with them. Infertile eggs keep better than those containing the life germ. The purity and freshness of the fresh egg can be obtained even after six months if these few hints are taken.

The effects of waterglass is simply to form an air tight covering, hermetically sealing the shell. Care should be taken to see that the eggs are kept covered; an inch or two of solution should always be above the eggs. Store the eggs in cool cellar, free from heat or frost.

Wash all eggs before using. Prick the shell with a needle before boiling, as they are liable to crack or burst whilst boiling. Cover all egg vessels containing the eggs in solution to prevent dust and dirt getting into the eggs. You see the farmer is the man to preserve eggs; the wholesaler often has to wait for days before the so-called fresh egg reaches him, but the farmer, if he follows these instructions, can have fresh eggs all the year round.

The trouble of waterglass is as nothing compared with the bother of lime. Besides the eggs are much better in every way. The expense is a mere trifle.

Success is certain if you use fresh eggs. The reason the ordinary store egg is not so good is simply because they were not put into solution till they had become stale. You can put down 10,000 eggs at a cost of a few dollars.

Remember once the eggs are removed from the waterglass, they are liable to go bad as quickly, if not quicker, than a fresh egg. So only remove them from the solution just before required for use or sale.

COST REDUCERS

So many dairymen wonder what the factor is going to pay, so many salesmen fight for another sixteenth of a cent on the price of cheese. That some milk producers in thinking almost entirely of selling price, are apt to overlook cost.

The twin sisters of economical milk production are good cows and individual records. Cows may be fed right and fed alike, yet fail to produce milk economically, that is at low cost, because they were not built on dairy lines. But even with the average run of dairy cows that seem to produce just about the same quantity of milk, there are so many strange variations that the keeping of milk records is not only advisable from the business standpoint, but becomes of fascinating interest.

When a simple feed record is kept in addition to the milk record, the

actual cost of milk as produced by each cow is ascertained easily, so that the owner may be assured that he is keeping only such cows as yield plenty of milk at a low cost. Can you tell offhand whether the milk of some of your cows costs 62 cents or 97 cents per 100 pounds? If your profit over cost of feed is now only \$10.00 per cow, you can make it \$20.00 by keeping records. Send to the Dairy Commissioner, Ottawa, for milk and feed record forms which are free. They are cost reducers.

QUACK GRASS

There is no easy way of killing quack grass. If you have not the time to go at it now and thoroughly kill it out, you can do nothing better than to seed your land down to timothy or timothy and clover, preferably the combination, and leave it until you can get around to thoroughly killing out the quack grass. Half-way methods of killing quack grass only scatter it and cause it to grow more vigorously. You can seed this piece down for a few years, and when you get ready to clean it up take off the first crop of hay, then plow it at once and keep it thoroughly disced for the balance of the season so that no grass will have a chance to appear above the surface of the ground. Such treatment followed by a cultivated crop the following season, such as potatoes or corn, should entirely eradicate the quack grass. This treatment will require from ten to fifteen dollars worth of cultivation per acre.

MILK PER ACRE

If it may be assumed that the farm of the average factory patron is in Canada, and is inclined towards dairying, rather than, let us say, fruit growing, and that his cows are fairly good; then it will be of interest to note how the farm is made to respond to this dairy inclination.

There are frequently noticed yields as low as 250 pounds of milk per acre cultivated including pasture, but some good patrons obtain 750 and 800 pounds per acre. Even this is little enough, for there are plenty of authentic records of 1,100 and 2,100 pounds of milk per acre. It should be extremely difficult to obtain more than this, even 2,500 or 3,000 pounds.

This latter figure is a long, long way ahead of the yields already mentioned of only 250 pounds which may be found on many a so-called dairy farm in Canada, and is indicative of the possibilities in reach of the factory patron who is really anxious to attain first rank.

It is questionable if the average yield per acre in Ontario is much more than 600 pounds of milk. If loyal whole-hearted support is given to the local factory and to our national industry of dairying the farm and the dairy herd will be made far more productive. Great help will be derived by keeping individual records of each cow, because the old-established, commonplace "average" cow has no intention whatever of assisting the average patron to get 3,000 pounds of milk from the average acre. The first necessary step is to know for certain that each cow is a good producer, then one may have high hopes at \$30 or \$40 per acre.

C. F. W.

CATARH AND DISCHARGES

SANTAL MIDN

Relief in 24 Hours

Each Cup 25 Cents

Box of 6 Cups 1.25

Prepared by Dr. J. H. Hare

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CARLETON CO. CROP REPORTS OF THE BEST

Outlook very promising—Potato crop of good quality and no signs of disease.

Hartand, N. B., July 29.—All through the country the reports are that the crops are well up to the average. Despite the backward spring, July has proved a savior and the general expression is that it is "great growing weather." The hay crop is being gathered in good shape, and while the quality may not be up to the standard of some years, it is a fair average one. The cool weather of June and the rapid growth of weeds has had a deteriorating effect on this crop, but farmers are fairly well satisfied. Timothy has not been up to the standard, but the weather has proved good for curing it. There will be less No. 1 than last year, but there will be an abundance of cattle hay as there has never been a heavier crop of clover. The potato acreage, despite the embargo of last year is away in advance of anything the farmers have yet attempted in this line. Although pessimists claim that Ontario and Quebec will have potatoes for export rather than from us and that there will be no chance to get into the United States markets, the dealers do not feel any great anxiety over the matter and are preparing to handle even greater quantities than ever before. The crop this year is looking fine and another month of fine weather will ensure an excellent production. No diseases have as yet shown themselves and even the old striped bug has not been as much in evidence as in some former years. Paris green and spraying have pretty well counteracted the ravages of the bug and unless the unexpected happens there should be a good crop of nice clean tubers.

Oats and wheat are heading out in fine style and a few more weeks of warm weather will ensure a full crop of first class quality. Root crops in general are doing fine and of these there promises to be an abundance. It has been a good year for pasture and the yield of butter has been good, while the prices have been well maintained. It most localities apples promise to be an excellent crop. The demand for beef cattle is very heavy and cannot be supplied, but this year there are a greater number of calves being raised than for many years and this promises well for the farmer and the consumer.

As far as the season has gone it has been a banner one for the farming industry, and when the harvest is over there will be abundant reason for thanksgiving among all classes.

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FLEET OF 86 AIR CRAFT READY FOR SERVICE TO HELP AUSTRIAN ARMY

Austria has a formidable aerial fleet at her disposal, according to a recent issue of Flying, official organ of the

Aero Club of America. This includes six large military dirigible air ships, ranging in length from 138 to 300 feet with gas capacity of 118,000 to 400,000 cubic feet.

One of these air ships is of the rigid type adopted by the German army. The others are non-rigid. Three of them are of the French Astra type, the others Halborn and Kordling dirigibles built in Austria.

The total lift of these great gas sustained craft ranges from five to eight tons each. In addition to those owned by the government there are

two others owned by civilians, one of the Mannsbart type recently offered for sale in the United States.

Henry Woodhouse, managing editor of Flying, yesterday estimated the aeroplane force of Austria to number eighty machines. The army has aerodromes at Wiener Neustadt, near Vienna, and at Gort. The Erlich monoplane and Lohner biplane are the principle types recently reported in use. Most of the Lohner were purchased after Lieutenant Philip Blanche established a world's altitude record in this type in 1912.

Legions More Adopt Goodyear Tires

This Year's Increase So Far—55 Per Cent

Please mark this fact:

After men have tried millions of No-Rim-Cut tires, this year's sales jump 55 per cent.

After going by leaps from bottom place to the top, this tire in one year wins 55 per cent more users. And wins them, mark you, by the mileage test; for most users today meter mileage.

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This verdict comes from the highest court. There is no appeal from users. They bought last year more Goodyear tires than of any other tire in the world. On top of that, they this year buy one-half as many more.

That's because we ended rim-cutting in the only feasible way.

It is because we saved men countless blow-outs with our "On-Air" cure. And no other maker does that.

It is because one method—used by us alone

—lessens loose tread danger by 60 per cent.

It is because of our All-Weather tread—a double-thick, resilient anti-skid, which runs on dry roads like a smooth tread.

No other tire offers one of these features. And the verdict of users tells you what they mean.

Half Former Prices

No-Rim-Cut tire prices are about one-half what they were in 1909. Part of the saving comes in lower-cost rubber, but a very large part is due to quantity output.

There are 18 Canadian and U. S. makes of tires today which sell at higher prices—up to one-half higher. The cost of three of some of them will buy you four of Goodyears.

Yet we give you in all ways the utmost in a tire. And in four ways we give you more than any other maker offers.

If you consider these facts—with the verdict of users—you can't doubt what tire to buy.



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WHAT THE MOVEMENT "HOME AND COUNTRY" DOING FOR ITS MEMBERS

Description of Work.

(Taken from the New Brunswick men's Institute Hand Book)

For thousands of years, to a lesser degree, the human race has been struggling with rural conditions. Amid privations and discouragements through difficulties and sufferings man has been endeavoring to this earth a better dwelling place for his children. Rural life at conditions call for careful intellectual action for their improvement. The progress of this in wealth and material prospects largely upon the education of the individual. To advance the condition of the people is the privilege as well as the most important duty of the statesman.

Of all the forms of help which can be given with safety and benefit are those which help to intellectual power, ability, skill, and good will. Women's influence and power have increased the past few years and so have made upon her have been so great.

Every woman who realizes the importance of her life work, it her duty to fulfill the mandates which devolve upon her fully as possible. But to take up the position and enter the life scheme intelligently, requires instruction and equipment for the great work before her. It would be hard to find a where womanhood is held in honor, has larger influence in affairs of life, national as well as local, or has ampler protection the law than in Canada. On men of the country as well as men, devolves the duty of bettering the homes of the nation.

Better Homes.

It is a fact much to be regretted until recently the women, especially on the farm, as in the home everywhere, were looked to a very great extent for the education of their wives and daughters. The duties are arduous and the fact carrying on her work indeed she has struggled on, to the duties as best she could with little knowledge and means. Every man wishes to provide a home where his wife and children can be happy, as the one great object in life is the end of every day's secure necessities, comforts and pleasures.

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